

Appendix B: Quick Reference Guide to SOFC Projects with Project Names, Brief Descriptions, Project Numbers, and Funding Levels

Key Technology Area: AEC Development							
Agreement Number	Project Title	Performer	DOE Share	Performer Share	Total Project Cost	Start Date	End Date
FWP-FEAA066	Reliability of Materials and Components for Solid Oxide Fuel Cells	Oak Ridge National Laboratory	\$6,075,000	\$0	\$6,075,000	10/1/2000	9/30/2014

Key Technology Area: Cell Development							
Agreement Number	Project Title	Performer	DOE Share	Performer Share	Total Project Cost	Start Date	End Date
FWP-2012.03.04	NETL-RUA Fuel Cells Initiative	National Energy Technology Laboratory	\$8,861,620	\$0	\$8,861,620	10/1/2011	9/30/2015
FE0009620	Surface-Modified Electrodes: Enhancing Performance Guided by In-Situ Spectroscopy and Microscopy	Stanford University	\$499,709	\$156,250	\$655,959	10/1/2012	9/30/2016

Key Technology Area: Cell Development

Agreement Number	Project Title	Performer	DOE Share	Performer Share	Total Project Cost	Start Date	End Date
FE0009675	Understanding of Oxygen Reduction & Reaction Behavior & Developing High Performance and Stable Heterostructured Cathode with Heterostructured Surface	West Virginia University Research Corporation	\$499,939	\$141,016	\$640,955	10/1/2012	5/31/2016
FE0023478	Advanced Solid-Oxide Fuel Cell Quality Control and the Role of Manufacturing Defects on Stack Reliability	Atrex Energy, Inc.	\$635,304	\$197,077	\$832,381	10/1/2014	12/31/2017
FE0023317	Cost Effective Manufacturing and Morphological Stabilization of Nanostructured Cathodes for Commercial Solid Oxide Fuel Cells	Trustees of the University of Pennsylvania	\$800,000	\$203,457	\$1,003,457	10/1/2014	3/31/2018
FE0023325	Mitigation of Chromium Impurity Effects and Degradation in Solid Oxide Fuel Cells	Trustees of Boston University	\$800,000	\$200,000	\$1,000,000	10/1/2014	9/30/2018
FE0023385	Materials and Approaches for the Mitigation of SOFC Cathode Degradation in SOFC Power Systems	University of Connecticut	\$1,219,000	\$306,863	\$1,525,863	10/1/2014	9/30/2018

Key Technology Area: Cell Development

Agreement Number	Project Title	Performer	DOE Share	Performer Share	Total Project Cost	Start Date	End Date
FE0023386	Novel Nanostructure Tailored Highly Active & Stable Electro-Catalytic Architecture on Surface of Cathode of SOFCS	West Virginia University Research Corporation	\$500,000	\$135,958	\$635,958	10/1/2014	3/31/2018
FE0023407	Scalable and Cost Effective Barrier Layer Coating to Improve Performance and Stability of SOFC Cathode	West Virginia University Research Corporation	\$800,000	\$251,649	\$1,051,649	10/1/2014	9/30/2018
FE0023475	Development and Characterization of High Performance and Robust Mixed Conducting Cathodes Supportive of Lower Cost Solid Oxide Fuel Cells	University of South Carolina	\$521,000	\$308,170	\$829,170	10/1/2014	3/31/2018
FE0023476	Long Term Degradation of LSM Based SOFC Cathodes Use of a Proven Accelerated Test Regiment	Case Western Reserve University	\$828,175	\$334,651	\$1,162,826	10/1/2014	3/31/2019
FE0026169	Development of a Thermal Spray Redox Stable, Ceramic Anode for Metal Supported SOFC	General Electric Company	\$2,648,224	\$882,741	\$3,530,965	10/1/2015	9/30/2018

Key Technology Area: Cell Development

Agreement Number	Project Title	Performer	DOE Share	Performer Share	Total Project Cost	Start Date	End Date
FE0026189	High Power, Low Cost Solid Oxide Fuel Cell Stacks for Robust and Reliable Distributed Generation	Redox Power Systems, LLC	\$2,500,000	\$625,000	\$3,125,000	10/1/2015	12/31/2018
FE0026096	Processing of SOFC Anodes for Enhanced Intermediate Temperature Catalytic Activity at High Fuel Utilization	Trustees of Boston University	\$800,000	\$200,000	\$1,000,000	10/1/2015	7/31/2020
FE0026106	Low-Cost, Durable, Contaminant-Tolerant Cathodes for Solid Oxide Fuel Cells	Georgia Tech Research Corporation	\$200,000	\$50,000	\$250,000	10/1/2015	7/31/2017
FE0026167	Scalable Nano-Scaffold Architecture on the Internal Surface of SOFC Anode for Direct Hydrocarbon Utilization	West Virginia University Research Corporation	\$799,999	\$209,739	\$1,009,738	10/1/2015	7/31/2020
FE0026192	Enhancing High Temperature Anode Performance with 2 Degrees Anchoring Phases	Montana State University	\$200,000	\$50,000	\$250,000	10/1/2015	7/31/2017

Key Technology Area: Cell Development

Agreement Number	Project Title	Performer	DOE Share	Performer Share	Total Project Cost	Start Date	End Date
FE0026210	Development of Low-Cost, Highly-Sinterable, Co-Free (Ni,Fe)3O4 Spinel-Based Contact Materials for SOFC Cathode-Side Contact Application	Tennessee Technological University	\$200,000	\$60,533	\$260,533	10/1/2015	7/31/2017

Key Technology Area: Coal Utilization Sciences / High Performance Material

Agreement Number	Project Title	Performer	DOE Share	Performer Share	Total Project Cost	Start Date	End Date
FE0024090	High Temperature Ceramic Heat Exchanger for Solid Oxide Fuel Cell	Mohawk Innovative Technology, Inc.	\$499,940	\$193,725	\$693,665	10/1/2014	3/31/2017

Key Technology Area: Core Technology

Agreement Number	Project Title	Performer	DOE Share	Performer Share	Total Project Cost	Start Date	End Date
SC0008203	SOFC Protection Coatings Based on a Cost-Effective Aluminization Process	NexTech Materials Ltd.	\$1,991,406	\$0	\$1,991,406	6/28/2012	12/31/2017
FWP-HYW1052A	Support FWP: Advanced SOFC Quality Control and the Role of Manufacturing Defects on Stack Reliability	National Renewable Energy Laboratory	\$153,000	\$0	\$153,000	10/1/2014	9/30/2017
FE0023315	Durable, Impermeable Brazes for Solid Oxide Fuel Cells	Michigan State University	\$694,026	\$204,773	\$898,799	10/1/2014	9/30/2018
FE0023536	Pressurized Testing of Solid Oxide Fuel Cells	Naval Undersea Warfare Center	\$300,000	\$0	\$300,000	8/15/2015	12/31/2017
FE0026095	Matrix Study of Aged SOFC Performance and Materials Degradation	Atrex Energy, Inc.	\$805,931	\$201,482	\$1,007,413	10/1/2015	3/31/2019

Key Technology Area: Core Technology

Agreement Number	Project Title	Performer	DOE Share	Performer Share	Total Project Cost	Start Date	End Date
FE0026097	Developing Accelerated Test Protocols and Tuning Microstructures of the Common Materials to Improve Robustness, Reliability, and Endurance of SOFC Cells	University of South Carolina	\$800,000	\$285,577	\$1,085,577	10/1/2015	7/31/2020
FE0026168	LSCF-CDZ Composite Cathodes for Improved SOFC Electrical Performance	Kettering University	\$159,029	\$38,758	\$197,787	10/1/2015	7/31/2017
FE0026190	In-Operando (While in Operation) Evaluation of Solid Oxide Fuel Cell Cathodes for Enhanced Oxygen Reduction Reaction Activity and Durability	University of Maryland	\$200,000	\$50,000	\$250,000	10/1/2015	7/31/2017
FE0027895	High Temperature Anode Recycle Blower for Solid Oxide Fuel Cell	Mohawk Innovative Technology, Inc.	\$2,098,408	\$569,443	\$2,667,851	10/1/2016	3/31/2020
FE0027918	Highly Selective and Stable Multivariable Gas Sensors for Enhanced Robustness and Reliability of SOFC Operation	General Electric Company	\$545,290	\$136,322	\$681,612	10/1/2016	12/31/2018

Key Technology Area: Core Technology

Agreement Number	Project Title	Performer	DOE Share	Performer Share	Total Project Cost	Start Date	End Date
FE0027894	Development of Chromium and Sulfur Getter for Solid Oxide Fuel Cell (SOFC) Systems	University of Connecticut	\$500,000	\$125,000	\$625,000	10/1/2016	6/30/2018
FE0027947	Minimizing CR-Evaporation from Balance of Plant Components by Utilizing Cost-Effective Alumina-Forming Austenitic Steels	West Virginia University Research Corporation	\$369,999	\$129,117	\$499,116	10/1/2016	4/30/2018
FE0028183	Chromium Vapor Sensor for Monitoring Solid Oxide Fuel Cell Systems	Auburn University	\$171,465	\$42,871	\$214,336	10/1/2016	3/31/2019
FE0031178	High Throughput In-Line Coating Metrology Development for Solid Oxide Fuel Cell Manufacturing	Redox Power Systems, LLC	\$224,984	\$74,996	\$299,980	10/1/2017	9/30/2019

Key Technology Area: System Development

Agreement Number	Project Title	Performer	DOE Share	Performer Share	Total Project Cost	Start Date	End Date
FWP-49071	Solid Oxide Fuel Cell Research and Development	Argonne National Laboratory	\$10,780,000	\$0	\$10,780,000	10/1/1995	2/28/2014
FWP-40552	SECA Core Technology Program - PNNL	Pacific Northwest National Laboratory	\$55,889,667	\$0	\$55,889,667	10/1/1999	9/30/2014
FE0023186	Reliable SOFC Systems	FuelCell Energy Inc.	\$7,500,000	\$1,875,000	\$9,375,000	10/1/2014	9/30/2017
FE0023337	Improved Reliability of Solid Oxide Fuel Cell Systems	LG Fuel Cell Systems Inc.	\$7,405,040	\$1,851,260	\$9,256,300	10/1/2014	9/30/2018
FE0026093	Innovative SOFC Technologies	FuelCell Energy Inc.	\$2,500,000	\$625,000	\$3,125,000	10/1/2015	9/30/2018
FE0026098	Advanced Materials and Manufacturing Processes for MW-Scale SOFC Power Systems for Improved Stack Reliability, Durability and Cost	LG Fuel Cell Systems Inc.	\$2,500,000	\$625,150	\$3,125,150	10/1/2015	12/31/2018
FE0026199	SOFC Prototype System Test	FuelCell Energy Inc.	\$5,998,928	\$3,489,817	\$9,488,745	10/1/2015	9/30/2018
FE0027584	Transformational SOFC Technology	FuelCell Energy Inc.	\$3,000,000	\$750,000	\$3,750,000	10/1/2016	9/30/2018

Key Technology Area: System Development

Agreement Number	Project Title	Performer	DOE Share	Performer Share	Total Project Cost	Start Date	End Date
FE0027844	Metal-Supported Ceria Electrolyte-Based SOFC Stack for Scalable, Low Cost, High Efficiency and Robust Stationary Power Systems	Cummins Power Generation	\$3,734,510	\$984,782	\$4,719,292	10/1/2016	9/30/2018
FE0027897	Redox Robust Solid Oxide Fuel Cell (SOFC) Stacks for affordable, Reliable, Distributed Generation Power Systems	Redox Power Systems, LLC	\$2,995,330	\$754,670	\$3,750,000	10/1/2016	9/30/2018
FE0028063	Performance and Reliability Advancements in a Durable Low Temperature Tubular SOFC	Atrex Energy, Inc.	\$2,456,228	\$614,057	\$3,070,285	10/1/2016	9/30/2018
FE0031180	Solid Oxide Fuel Cell (SOFC) Prototype System Testing	LG Fuel Cell Systems Inc.	\$5,696,566	\$1,424,142	\$7,120,708	10/1/2017	9/30/2019

